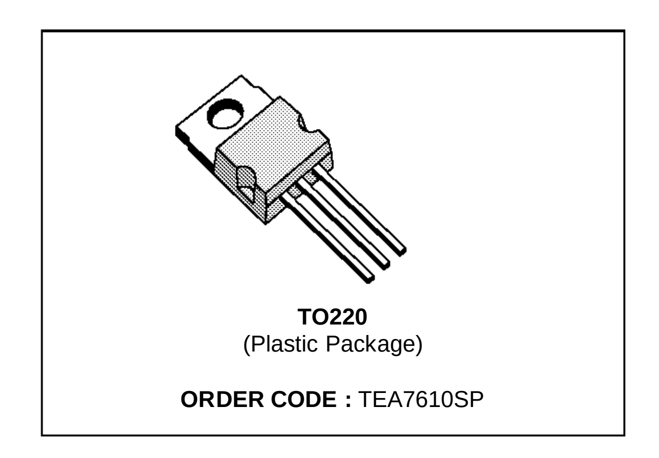


TEA7610

LOW-DROP VOLTAGE REGULATOR

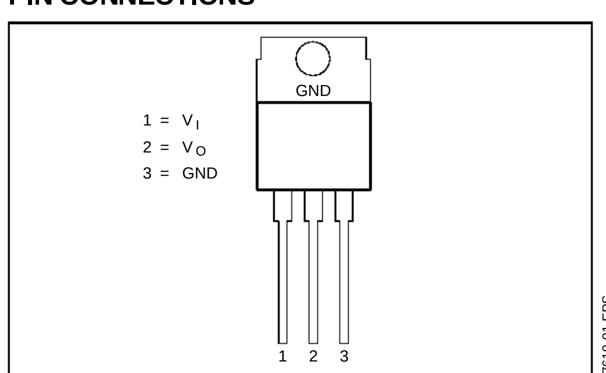
- V_O = 10V ± 4 % (I_O = 5mA)
- I_O = 5 TO 500mA
- $V_I - V_O$ = 0.6 V (I_O = 500mA)
- $V_{I\,(surge)}$ = ± 80V
- THERMAL AND SHORT-CIRCUIT PROTECTION



TO220
(Plastic Package)

ORDER CODE : TEA7610SP

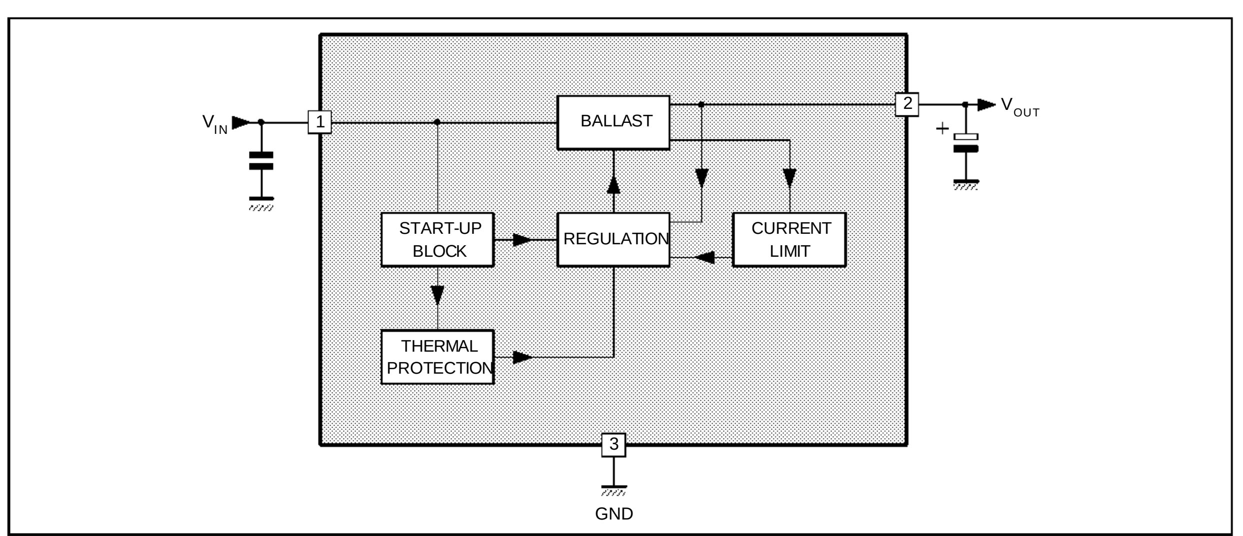
PIN CONNECTIONS



DESCRIPTION

TEA7610 is a low-drop regulator well suited to supplying stabilized voltage to µPs in harsh industrial environment.
Special care was taken to keep :
- Lowest possible output capacitor (1µF).

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_I	Input Voltage - Continuous - τ = 300 ms	 30 80	 V V
$V_{I(R)}$	Reverse Input Voltage - Continuous - τ = 120 ms	 – 18 – 80	 V V
T_J	Operating Junction Temperature	– 45, +150	°C
T_{stg}	Storage Temperature	– 55, +150	°C

7610-01.TBL

THERMAL DATA

Symbol	Parameter		Value	Unit
$R_{th\ (j-c)}$	Junction-case Thermal Resistance	Max.	3	°C/W
$R_{th\ (j-a)}$	Junction-ambient Thermal Resistance	Max.	70	°C/W

7610-02.TBL

ELECTRICAL OPERATING CHARACTERISTICS

$T_j = 25^oC$, V_I = 14.4V (unless otherwise specified) Output Capacitor = 10µF (see note)

Symbol	Parameter		Min.	Typ.	Max.	Unit
V_O	Output Voltage (I_O = 5 to 500mA)		9.7	10	10.3	V
V_I	Input Supply Voltage (permanent)				28	V
I_{CC}	Current Consumption	I_O = 0mA I_O = 150mA I_O = 500mA		1.5 10 75	2 20 100	mA mA mA
K_{VI}	Line Regulation (V_I = 11 to 26V ; I_O = 5mA)			5	20	mV
K_{VO}	Load Regulation (I_O = 5 to 500mA)			40	80	mV
V_I - V_O	Drop-out Voltage	I_O = 150mA I_O = 500mA		0.18 0.4	 0.6	V V
SVR	Supply Voltage Rejection (I_O = 350mA, f = 120Hz, C_O = 1µF, V_I = 12 ± 5V)			60		dB
I_{OS}	Short-circuit Output Current		0.5	0.7		A

7610-03.TBL

NOTE : Applications Hints
The output capacitor has a direct influence on output voltage stability. A 10 µF capacitor will provide satisfactory results. There is no upper limit on this capacitor value.
If necessary, this value can be reduced down to 1 µF ; however, in such case, it should be checked that output capacitor keeps sufficiently high capacitance and low equivalent series resistance in the whole temperature range.
Such low capacitor value is not recommended either, if output current is to switch abruptly from very high to very low values (for instance, 400 mA to < 1 mA).

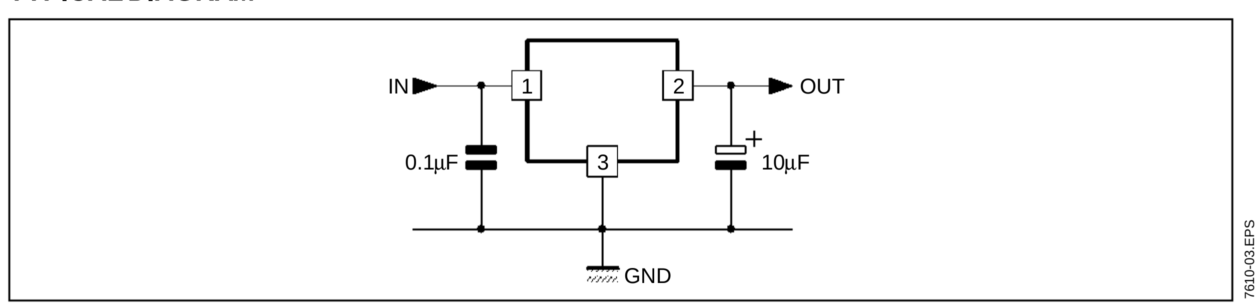
ELECTRICAL OPERATING CHARACTERISTICS

$T_j = -45^oC$ to $+125^oC$, V_I = 14 .4V (unless otherwise specified) Output Capacitor = 10µF

Symbol	Parameter		Min.	Typ.	Max.	Unit
V_O	Output Voltage (I_O = 5 to 500mA)		9.6	10	10.4	V
$\frac{d_{VO}}{d_t}$	Output Voltage Drift	T_j = – 45 to +25°C T_j = + 25 to +125°C	– 1 – 1.2			mV/°C
I_{CC}	Current Consumption	I_O = 0mA I_O = 150mA I_O = 500mA			2.5 25 120	mA mA mA
K_{VI}	Line Regulation (V_I = 11 to 26V, I_O = 5mA)				30	mV
K_{VO}	Load Regulation (I_O = 5 to 500mA)				100	mV
V_I - V_O	Drop-out Voltage	I_O = 150mA I_O = 500mA		0.2	 0.8	V V
I_{OS}	Short-circuit Output Current		0.4			A
I_{OM}	Maximum Output Current		0.5			A

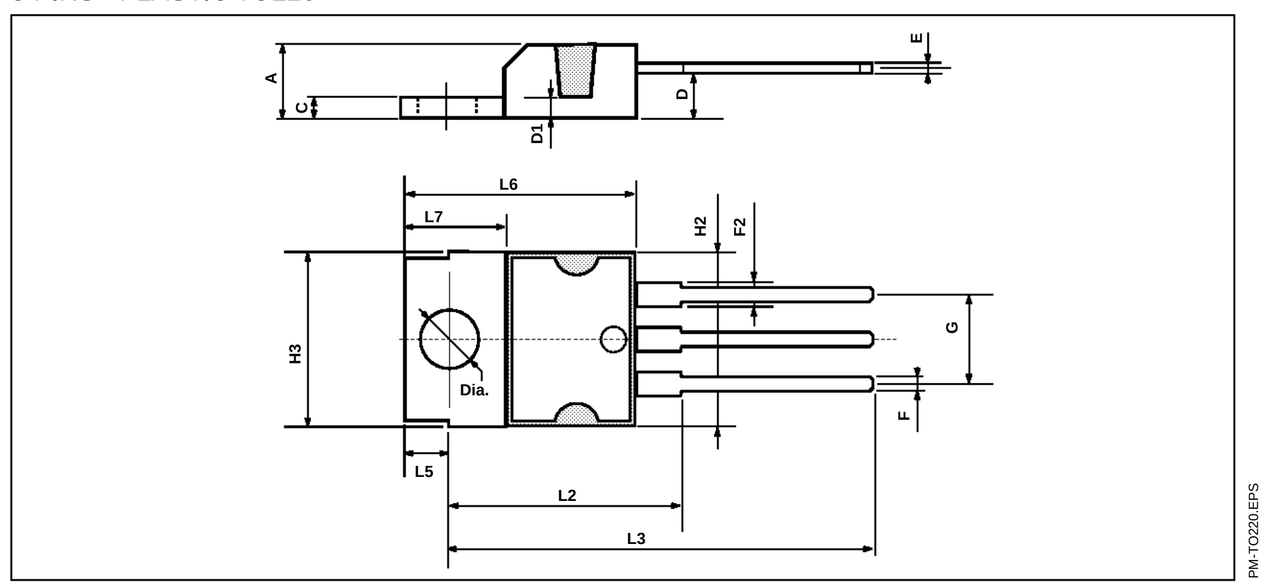
7610-04.TBL

TYPICAL DIAGRAM



PACKAGE MECHANICAL DATA

3 PINS - PLASTIC TO220



Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			4.8			0.189
C			1.37			0.054
D	2.4		2.8	0.094		0.110
D1	1.2		1.35	0.047		0.053
E	0.35		0.55	0.014		0.022
F	0.8		1.05	0.031		0.041
F2	1.15		1.4	0.045		0.055
G	4.95	5.08	5.21	0.195	0.200	0.205
H2			10.4			0.409
H3	10.05		10.4	0.396		0.409
L2		16.2			0.638	
L3	26.3	26.7	27.1	1.035	1.051	1.067
L5	2.6		3	0.102		0.118
L6	15.1		15.8	0.594		0.622
L7	6		6.6	0.236		0.260
Dia.	3.65		3.85	0.144		0.152

TO220.TBL

